Summary of Results of Charbert Hydrogen Sulfide Monitoring
August 30 – September 3, 2004
And Volatile Organic Compound Sample from September 1, 2004

The Rhode Island Department of Environmental Management (RI DEM) currently operates a continuous hydrogen sulfide monitor in Alton, Rhode Island, north of the lagoons at the Charbert facility. The monitor operated from June 7, 2004 to August 12, 2004 at 16 River Street, Alton. On August 12, 2004 it was moved, in response to the request of residents, to a nearby location at 7 Myrtle Street, Alton

As has been the case since July 30th, three days after Charbert began to aerate its active lagoon, no hydrogen sulfide levels above 10 ppb were recorded during the period August 30th through September 1st. The highest level measured during that period, 5 ppb, was recorded at 9:23 AM on Friday, September 3rd. These levels are consistent with background concentrations. Before the aeration began, elevated hydrogen sulfide levels occurred frequently in the area. Hydrogen sulfide concentrations that have been measured at the Myrtle Street and River Street sites and at another, now discontinued, site on Woodville-Alton Road are displayed in Table I below.

Although hydrogen sulfide levels have been significantly reduced, neighbors have reported smelling a burning oil odor in the area in recent weeks. To determine whether other air contaminants are present, RI DEM collected air samples in evacuated canisters on June 24 and July 30, 2004 and analyzed those samples for volatile organic compounds (VOCs). VOC levels in both of those samples were not elevated above expected background levels for non-urban areas. However, in the July 30th sample, the laboratory tentatively identified three aldehyde compounds that are not frequently seen in VOC samples taken in Rhode Island.

Since the canister sampling method cannot accurately quantify aldehyde concentrations, RI DEM collected a 24-hour air sample on Myrtle Street using the recommended method for sampling for aldehydes on Saturday, August 28th. This sample is currently being analyzed for a full range of aldehydes, including the three tentatively identified in the July 30th VOC sample, by the New York Department of Conservation (NY DEC) laboratory.

In addition, since residents report that odors typically are worst in the evening and nighttime hours when RI DEM personnel are not available, RI DEM supplied a neighborhood resident with an evacuated canister so that she could collect an additional VOC sample when the odor is present. The resident reported that the sample was taken from 7:40 – 8:10 PM on Wednesday, September 1st at 1 Poplar Avenue and that there was a strong oil burning odor during the first ten minutes of the sample that decreased significantly in intensity during the sample period.

The results of that VOC sample, as well as the results of the previous VOC samples, are attached as Appendix A. Concentrations of VOCs in the September 1st sample were similar to those in the earlier samples. The aldehydes tentatively identified in the July 30th sample were not present in the September 1st sample. VOC concentrations were again typical of those seen in non-urban areas in the State.

Hydrogen sulfide monitoring is continuing at the Myrtle Street location. The results of the aldehyde sample taken on September 28th will be released when they are received from the NY DEC laboratory. For more information about sampling results, contact Barbara Morin at 222-4700, ext. 7012.

Table I Maximum Hydrogen Sulfide Levels

Monitor	Date	Maximum 15-minute Reading	Maximum 1-hour Level Nuisance Air Quality >2 - <100 ppb Moderate Air Quality 100 - <1000 ppb	Maximum 24-hour Level Nuisance Air Quality >2 - < 30 ppb Moderate Air Quality 30 - <70 ppb
Myrtle Street	8/12 – 8/30/04	5 ppb	3 ppb	0.6 ppb
	8/31 – 9/3/04	5 ppb	3 ppb	0.4 ppb
River Street	6/7– 6/14/04	78 ppb	49 ppb	7 ppb
	6/15 – 6/21/04	44 ppb	29 ppb	7 ppb
	6/21 – 6/28/04	90 ppb*	79 ppb*	15 ppb
	6/28 – 7/7/04	90 ppb*	78 ppb*	16 ppb
	7/7 – 7/12/04	45 ppb	33 ppb	7 ppb
	7/16 – 7/26/04	90 ppb*	86 ppb*	16 ppb
	7/27**– 8/3/04	29 ppb	23 ppb	3 ppb
	8/3 – 8/9/04	9 ppb	5 ppb	0.4 ppb
	8/10 – 8/12/04	2 ppb	2 ppb	0.5 ppb
Woodville-Alton Rd	5/13 – 6/7/04	6 ppb	2 ppb	0.2 ppb
	6/6 – 6/14/04	27 ppb	19 ppb	3 ppb
	6/15 – 6/21/04	10 ppb	5 ppb	1 ppb
	6/22 – 6/28/04	16 ppb	13 ppb	2 ppb
	6/28 – 7/7/04	39 ppb	28 ppb	2 ppb
	7/7 – 7/15/04	12 ppb	7 ppb	1 ppb

*Due to the limitations of the instrumentation, concentrations during these periods may have been higher than these values.

**Aerator began operation on 7/27/04.

Appendix A	South End	South End	16	1	Cancer	Noncancer
Charbert VOC samples	River St.	Myrtle St.	River St.	Poplar Av	1/million	Benchmark
	06/24/04	06/24/04	07/30/04	09/01/04	Benchmark	
Name	ppb	ppb	ppb	ppb	ppb	ppb
ethylene	1.10	0.98	0.30	0.65		
acetylene	0.94	2.42	0.32	0.56		
ethane	2.06	2.12	2.56	1.23		
propene	0.24	0.21	0.17	0.22		2000
propane	3.71	3.27	0.96	0.98		
chloromethane	0.73	0.67	0.59	0.60		40
isobutane	0.30	0.29	0.09	0.28		
1-butene	0.14	0.12	0.15	0.17		
1,3-butadiene	0.02	0.03	0.01	0.02	0.01	2
butane	0.56	0.52	0.13	0.71		
acetonitrile	0.04	0.00	0.14	0.14		40
acetone	9.36	0.85	6.71	5.06		10000
isopentane	1.17	1.02	0.04	1.70		
pentane	0.41	0.43	0.10	0.61		
carbon disulfide	0.02	0.01	0.005	0.009		200
Methyl-t-butyl-ether	0.58	0.63	0.05	1.31		800
2-methylpentane	0.33	0.29	0.04	0.49		
methyl ethyl ketone	0.39	0.04	0.38	0.38		300
3-methylpentane	0.22	0.17	0.01	0.24		
n-hexane	0.23	0.20	0.000	0.30		60
1,1,1-trichloroethane	0.02	0.02	0.003	0.02		200
benzene	0.22	0.19	0.05	0.23	0.04	9
carbon tetrachloride	0.12	0.09	0.09	0.09	0.01	6
n-heptane	0.07	0.07	0.00	0.13		
toluene	0.67	0.66	0.04	0.80		100
ethylbenzene	0.09	0.11	0.00	0.13		200
p & m xylenes	0.24	0.28	0.008	0.39		20
o-xylene	0.10	0.10	0.00	0.14		20
a-pinene	0.92	0.96	0.04	0.33		
1,2,4-trimethylbenzene	0.09	0.10	0.02	0.14		
trans-2-butene	0.05	0.04	0.01	0.07		
cis-2-butene	0.05	0.05	0.008	0.07		
1-pentene	0.05	0.05	0.05	0.08		
isoprene	0.34	0.55	4.59	3.92		
trans-2-pentene	0.07	0.10	0.00	0.14		
cis-2-pentene	0.03	0.05	0.00	0.06		
dichloromethane	0.11	0.09	0.05	0.06	0.6	100
2,2-dimethylbutane	0.04	0.05	0.00	0.05		
cyclopentane	0.04	0.04	0.00	0.08		
2,3-dimethylbutane	0.11	0.12	0.00	0.15		
chloroform	0.04	0.04	0.00	0.02	0.008	60
methylcyclopentane	0.14	0.12	0.00	0.20		
2,4-dimethylpentane	0.05	0.04	0.00	0.08		
cyclohexane	0.05	0.05	0.00	0.07		
2-methylhexane	0.10	0.09	0.00	0.11		
2,3-dimethylpentane	0.06	0.06	0.00	0.12		
3-methylhexane	0.11	0.10	0.00	0.15		

Appendix A	South End	South End	16	1	Cancer	Noncancer
Charbert VOC samples	**River St.**	**Myrtle St.**	**River St.**	**Poplar Av**	**1/million**	**Benchmark**
trichloroethylene	0.003	0.000	0.000	0.007	0.09	100
	South End	**South End**				
Charbert samples	**River St.**	**Myrtle St.**			**Cancer**	**Noncancer**
	6/24/2004	**6/24/2004**			**1/million**	**Benchmark**
Name	**ppb**	**ppb**			**ppb**	**ppb**
2,2,4-trimethylpentane	0.16	0.15	0.01	0.23		200
methylcyclohexane	0.06	0.05	0.00	0.05		
2,3,4-trimethylpentane	0.05	0.05	0.00	0.08		
2-methylheptane	0.03	0.02	0.00	0.05		
3-methylheptane	0.03	0.02	0.00	0.06		
n-octane	0.04	0.03	0.00	0.04		
tetrachloroethylene	0.04	0.03	0.00	0.03	0.03	5
styrene	0.01	0.02	0.00	0.10		200
n-nonane	0.03	0.02	0.00	0.02		
isopropylbenzene	0.009	0.009	0.00	0.01		
n-propylbenzene	0.02	0.03	0.00	0.03		
m-ethyltoluene	0.06	0.06	0.002	0.08		
p-ethyltoluene	0.04	0.04	0.00	0.04		
1,3,5-trimethylbenzene	0.02	0.02	0.00	0.03		
o-ethyltoluene	0.03	0.03	0.00	0.03		
n-decane	0.03	0.02	0.00	0.02		
p-dichlorobenzene	0.01	0.008	0.00	0.006	0.02	100
1,2,3-trimethylbenzene	0.02	0.02	0.00	0.03		
m-diethylbenzene	0.004	0.000	0.00	0.005		
p-diethylbenzene	0.01	0.02	0.00	0.02		
n-undecane	0.03	0.03	0.02	0.02		
dodecane	0.03	0.03	0.02	0.00		
vinyl chloride	0.000	0.000	0.000	0.000	0.09	40
acrylonitrile	0.000	0.000	0.00	0.000	0.005	0.9
1,1-dichloroethene	0.000	0.000	0.00	0.000	0.005	50
1,1-dichloroethane	0.000	0.000	0.00	0.000	0.16	
ethyl acetate	0.000	0.000	0.00	0.02		
1,2-dichloroethane	0.000	0.000	0.00	0.000	0.01	100
1,2-dichloropropane	0.000	0.000	0.00	0.000	0.02	0.9
cis-1,3-dichloropropene	0.000	0.000	0.00	0.000	0.04	4
trans-1,3-dichloropropene	0.000	0.000	0.00	0.000	0.04	4
1,2-dibromoethane	0.000	0.000	0.00	0.000	0.00065	0.8
chlorobenzene	0.000	0.000	0.00	0.000		200
1,1,2,2-tetrachloroethane	0.000	0.000	0.00	0.000	0.003	400
TNMOC ppbC	156	134	103	152		
*Note: Total NonMethane Organic Compounds (TNMOC) is in units of						
parts per billion carbon (ppbC)						